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ABSTRACT

A study undertaken to examine the effects on students of participation in a limited experiential learning program yielded no definitive conclusions but suggested several directions for further study. Dartmouth College undergraduate students who enrolled in an intermediate psychology course in 1973 and 1974 had the opportunity to be selected to participate concurrently in a 3-weekend Outward Bound program. Researchers administered questionnaires to the students on the first day and during the first week of the fall 1974 course, at the end of the fall 1973 course, and one year after the fall 1973 course. The four questionnaires measured both the Outward Bound and the non-Outward Bound students to determine their attitudes towards the course, the change in their attitudes over time, the application of course material and course influence over time, their general attitudes, and their evaluation of the Outward Bound program. Results indicated that Outward Bound had some effects on participants and on their perceptions of the course. The students selected for Outward Bound were more concerned about grades, more negative about the technical and structural aspects of the course, and more likely to find the course challenging than the other students. Future research should focus on the Outward Bound selection process. (SB)

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Short Term Experiential Laboratories in Academic Courses

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Abstract

This study was undertaken to assess the effects on undergraduates of participation in a limited experiential learning program offered as part of an academic course. Analyses were carried out to assess the variables of participation in the course and time on perceptions of the course, education, and on the lasting effects of the course on its students. Data were collected from 4 questionnaires, two of which were answered by members of the class in the fall while it was being offered and two were answered one year after the course was offered. Mean scores were computed and analyses carried out on those questions which appeared to have significant differences between the groups. We found many results but offer no definitive conclusions; rather, we discuss possible interpretations and further directions for study.

Short Term Experiential Laboratories

in Academic Courses

As part of an intermediate level course on the psychology of learning, students at Dartmouth College are offered the unique educational experience of being able to participate in an Outward Bound program concurrently with the course.

The Outward Bound program consists of three weekend "laboratories" which present participants with a series of unusual and challenging problems. In 1973 the activities consisted of rock-climbing, sailing open pulling boats off Hurricane Island, Maine, and foraging in the woods near Walden Pond. Except for the last, the activities for 1974 were the same; the substitution was "tree communities", in which participants lived in trees for a specified period of time. In 1974, there was an additional Outward Bound group in the course: students involved in the Living/Learning Term (LLT) (see Jernstedt & Johnson, 1974). This is a broader program offers more extended trips, but also a group living situation, community service, and other activities.

The coordinators of this dual program have expected that, as a minimum, Outward Bound would provide a taste of experiential learning and some amount of individual growth. It has also been hoped that this program would increase the impact of the learning course its relevance to real-life experiences and situations.

Our purpose in this study was to examine what effects the Outward Bound experience had on the members of the course who

participated in it. The primary focus was on the weekend Outward Bound group rather than on the LLT alone or the two together (although we do discuss the LLT in this study); this is partially because the LLT is a completely different experience which should be studied separately (see Jernstedt & Johnson, 1974). It should be emphasized that the current study is a preliminary one and as such we offer no definitive conclusions. We do, however, devote a large portion of our discussion section to directions to follow in future investigations.

Methods

All data for this study were compiled from the results of four questionnaires. Two of these were distributed to students who had taken the learning course in the fall of 1973, and two were answered by students who took the course in the fall of 1974. All relevant data from each questionnaire were put into a computer data file which was subsequently made into a master matrix, in which the subjects were entered in the rows, and the questions entered in the columns. The questionnaires fell naturally into four categories, each of which is discussed below:

1. First day of class. On the first day of class, fall 1974, a questionnaire was distributed to the students in the course (Q74-1). This questionnaire was distributed before the participants in the Outward Bound lab program were selected. The questions dealt with general information about the students (major, class, study habits, etc.) and with the students'

expectations about the course (work load, flexibility, etc.). A total of 31 questions was asked, of which we used 26.

After the Outward Bound selections were made, and after we had compiled our data files, two pieces of information were added: sex and group. The three groups were 1) Non-Outward Bound students (NOB); 2) Outward Bound lab students (OB) and 3) students in the living-learning program (LLT). A total of 127 students were finally entered in a master matrix; the groups were divided with a final total of 86 NOB, 32 OB, and 9 LLT.

2. First week of class. A second questionnaire (Q74-2) was given to the students in the fall of 1974 learning class, four days after the first one. At this time the students had been selected and notified of their participation in Outward Bound, but they had not yet participated in the first weekend.

There were some questions that concerned expectations of the course, including three that were comparable to questions from the first questionnaire (Q74-1). Other questions dealt with general attitudes and values, and some focused on specific attitudes regading educational philosophy. A total of 49 questions were asked. A total of 75 people were entered into the data file, with the group breakdowns as follows: NOB:53, OB:20, LLT:2.

3. End of course evauation. This questionnaire (Q73-1) was given at the end of fall term 1973, and after the completion of the Outward Bound program. The questions dealt with attitudes about, and criticisms of, the learning course. There was a total

of 119 questions. After the master matrix was made, two pieces of information, sex and group, were added. All Outward Bound people who responded were included, although some only went on one or two weekends. The majority participated in all three. All Non-Outward Bound respondents who answered the fourth questionnaire were included in this matrix. A total of 85 students were entered: 53 NOB and 32 OB.

4. One year later. During the fall of 1974, the authors mailed questionnaires (Q73-2) to students who had taken the learning course the previous fall. Questions focused on attitudes toward the course, retention and utilization of course materials, abilities acquired in the course, and opinions on how the course may have influenced the subjects over that year. These included scaled questions, yes/no questions, and essay questions.

Some of the questions on part one were comparable to questions on the end of the year course evaluations (Q73-1). An additional section applying only to Outward Bound participants was included; this included both scaled and essay questions. A total of 51 scaled questions were asked. Sixty-five students were entered into the matrix: 49 NOB and 16 OB. Again, all Outward Bound respondents were included regardless of how many trips they attended.

The final master matrices were used for analyses of variance. First we obtained mean values for each question for the total sample. These means were then broken down into means

for each group on each question. For the 1973 sample, the groups were Non-Outward Bound (NOB) and Outward Bound (OB). For the 1974 sample, there were three groups: NOB, OB and LLT (Living-Learning Term). We also computed means for the 1974 group which combined the two Outward Bound groups (OB + LLT).

Possible variances between groups on any questions were analyzed for each questionnaire. Several analyses were made by dropping the LLT group completely, and also by combining them with the other OB students on the 1974 questionnaires; this was done because during the course of the study it became apparent that the presence of the LLT students was influencing whether or not significant differences were found between groups on certain questions.

An analysis was also carried out on all comparable questions across the two sets of questionnaires (i.e. Q74-1 compared to Q74-2, Q73-1 to Q73-2). The intent was to determine if there were significant interactions between the time and Outward Bound factors. Again, the analysis was made by separating the three groups (NOB, OB, LLT), by dropping LLT and using only OB and NOB, and by combining the LLT means with the other OB group.

Results

What follows are the significant results obtained from the analyses of variance. All results reported have a probability (p) of < 0.05. This listing is divided into five distinct categories.

I. Attitudes towards the course.

A. Questionnaire 074-1 (first day of class, prior to OB selection) was first analyzed by using three groups: Non-Outward Bound (NOB), Outward Bound (OB) and Living-Learning Term (LLT). We found no ($p<.05$) significant results. There were, however, marginal p values found on three questions:

#6 "If you could pick which way your grade would be determined, which would you prefer? (1) exams (2) papers

$p= .08573$

#21 (Concerning overall properties of the course) "You will learn a great deal of factual content" (1=more than other courses...5=much less than other courses)

$p=.08198$

#24 (Concerning overall properties) "It will be easy to get the grade you want"

$p= .05918$

These results suggest that there was confounding between the OB and LLT groups. An analysis was then carried out by dropping the LLT group entirely; another was made by including LLT with the OB group. When LLT was removed completely, no significant differences were found. However, when the LLT group was joined with the OB group, significant differences were found on two questions concerning the overall properties of the course.

#15 Flexibility (Scale: 1=more than other courses...5=much less than others)

NOB mean=2.1883 OB + LLT mean=1.80483

$\underline{F}$=3.9427 $\underline{P}$=.04641 $\underline{w}^2$(%)=.02265

The means for the individual groups ranked as follows:

NOB= 2.1883 OB= 1.8125 LLT=1.77778

#21 "You will learn a great deal of factual content"

NOB= 2.7635 OB + LLT mean= 3.14634

$\underline{F}$= 4.52736 $\underline{p}$= .03315 $\underline{w}^2$(%)= .02702

The means for the individual groups were as follows:

NOB= 2.7635 OB= 3.0625 LLT= 3.44444

For both questions, the effect of joining the LLT and OB groups was to magnify the difference between any group with Outward Bound people in it and the NOB group. In other words, the means for the LLT group went in the same direction as the OB means, except to a greater degree.

B. The second questionnaire (Q74-2), given four days after Q74-1 and after the students knew they had been accepted in the Outward Bound program, was also analyzed first by using three groups for analysis (NOB, OB, and LLT). Again, no differences were found. Two questions were then analyzed by first dropping the LLT group altogether, and then combining them with the OB group. In the first case the NOB mean fell between the LLT and OB means, and in the second analysis, the OB mean feel between that of the other two groups. However, there was little difference between dropping the LLT group and combining it with OB.

#21 Religious Value (1=increase 2= stay the same 3=decrease)

NOB mean= 1.82009 OB mean= 1.47324 LLT mean= 2.00

p= .01445 with LLT dropped

p= .02755 with OB and LLT combined

#5 Course expected to be exciting (1=much more than other courses....7=much less than other courses)

NOB mean= 2.72616 OB mean= 1.95 LLT mean= 1.5

p= .01675 with LLT dropped

p= .0091 with OB and LLT combined

All results that follow were obtained combining the OB and LLT groups for 074-2. Several significant differences were revealed between the two (NOB and OB-LLT) groups concerning expectations of the course (i.e. what they thought the course was going to be like and what they expected to get out of it). The following scale was used: 1= much more than other courses....7= much less than other courses. The results show a general pattern. On all three questions, all subjects tended to respond in the affirmative (i.e. "more than other courses"); however, the Outward Bound group was consistently more affirmative than was the Non-Outward Bound.

#5 Exciting

NOB mean= 2.72616 OB mean= 1.90909

F= 7.14055 p= .0091 w^2(%)= .07568

#9 Development of you as an individual

NOB mean= 2.84906 OB mean= 2.18182

F= 4.42965 p= .03645 w^2(%)= .04373

#10 More self-respect and self-confidence

NOB mean= 3.28506 OB mean= 2.68182

F= 4.23617 p= .0406 w^2(%)= .04137

C. There were also significant differences between the NOB and OB groups for the course evaluation handed out at the end of the fall term in 1973 (Q73-1). Two scales were used: an Absolute Scale (A.S.) 1= very definitely....5= not at all and a Relative Scale (R.S.) 1= much more than other courses....5 much less than other courses. Each question is marked as to which scale was used.

Overall Properties of the Course

#7 Difficult (A.S.)

NOB mean= 2.84322 OB mean= 2.4375

F= 3.96986 p= 0.04678 w^2(%)= 0.03376

Although both groups found the course to be somewhat difficult, the Outward Bound group found it more so than the Non-Outward Bound group.

#8 Well-integrated (A.S.)

NOB mean= 1.88747 OB mean= 2.28125

F=4.15547 p=0.04207 w^2(%)= 0.03579

Both groups found the course to be considerably well-integrated; however, the Non-Outward Bound students found it to be more so than the Outward Bound students.

#25 Subject matter clearly organized (R.S.)

NOB mean= 1.84906 OB mean= 2.25

F= 4.68771 p= 0.03123 w^2(%)= 0.04158

Both groups found the course to be more clearly organized than other courses. However, the Outward Bound group was less positive (more towards a neutral ground) than the Non-Outward Bound group.

#14 Learned factual content (A.S.)

NOB mean= 2.58491 OB mean= 3.03125

F= 5.70455 p= 0.01815 w^2(%)= 0.05244

Feedback on Performance

#52 Available (R.S.)

NOB mean= 2.21528 OB mean= 2.73155

F= 4.65853 p= 0.03174 w^2(%)= 0.04127

Both groups felt that feedback was more available in the course than in other courses. Again, however, the NOB felt that feedback was more available than did the OB group, who were close to ranking the course as being the same as other courses in this area.

Grades

#54 Grading scale was fair (R.S.)

NOB mean= 2.56155 OB mean= 3.09375

F= 4.71022 p= 0.03085 w^2(%)= 0.04182

The Non-Outward Bound group found the grading scale to be a little fairer than that in other courses, while the Outward Bound group felt it was about the same as in other courses.

#38 Felt pressure towards getting good grades (A.S.)

NOB mean= 3.24528 OB mean= 2.40625

F= 7.40082 p= 0.00788 w^2(%)= 0.07003

On this question, the Non-Outward Bound group felt neutral about the amount of pressure they felt towards getting good grades, while the Outward Bound people did feel some pressure.

#56 Felt pressure towards getting good grades (R.S.)

NOB mean= 3.39623 OB mean= 2.9375 $\underline{w}^2$(%)= 0.03886

$\underline{F}$= 4.43632 $\underline{p}$= 0.03591 $\underline{w}^2$(%)= 0.03886

On a relative scale, the NOB subjects felt about the same grade pressure as in other courses, while the OB subjects felt a slightly greater pressure than in other courses.

Class Meetings

#48 Integrated with rest of course (A.S.)

NOB mean= 1.62264 OB mean= 2.28125

$\underline{F}$= 11.065 $\underline{p}$= 0.00169 $\underline{w}^2$= 0.10587

On the absolute scale Non-Outward Bound subjects found the class meetings to be more well-integrated with the rest of the course than did the Outward Bound students, although both groups were on the positive side of the scale.

#66 Integrated with rest of course (R.S.)

NOB mean= 1.92453 OB mean= 2.4375

$\underline{F}$= 5.92315 $\underline{p}$= 0.01622 $\underline{w}^2$= 0.05475

Again, although both groups felt that class meetings were more well-integrated than in other courses, the NOB group felt this more strongly than the OB group.

Conferences

#68 Consistent (R.S.)

NOB mean= 2.68084 OB mean= 3.03337

F= 4.62807 p= 0.03228 w^2= 0.04094

The Non-Outward Bound subjects found conferences to be a little more consistent in the course than did the Outward Bound subjects, who found the consistency of conferences to be about the same as in other courses.

Exams

#73 Useful (A.S.)

NOB mean= 3.08154 OB mean= 3.71875

F= 5.9922 p= 0.01566 w^2= 0.05547

Although neither group deviated greatly from a neutral stand on the usefulness of exams, the OB group felt that they were slightly less useful than did the NOB group.

#82 Useful (R.S.)

NOB mean= 2.68014 OB mean= 3.65625

F= 15.0565 p= 0.00043 w^2= 0.1419

The NOB group felt that the exams in the course were slightly more useful than exams given in other courses, while the OB group found the exams to be slightly less useful than in other courses.

#76 Accurate test of knowledge (A.S.)

NOB mean= 3.73585 OB mean= 4.28125

F= 7.6057 p= 0.00716 w^2= 0.07211

Although both groups felt the exams were not an accurate test of their knowledge, the Outward Bound students felt they were less accurate than did the Non-Outward Bound students.

#77 Integrated with rest of course (A.S.)

NOB mean= 2.29575 OB mean= 3.30233

F= 16.4507 p= .00029 w^2= 0.15381

On an absolute scale, the NOB group felt the exams were somewhat related to the rest of the course, while the OB group felt they were not very integrated.

#86 Integrated with rest of course (R.S.)

NOB mean= 2.43396 OB mean= 3.21875

F= 12.9954 p= 0.00084 w^2= 0.12267

The students who were not in Outward Bound found the exams to be slightly more integrated with the course than exams in other courses, while the participants in the program felt that the exams in the course were integrated to the same degree as exams in other courses.

D. Lastly, we found differences between the two groups from the fall of 1973 who responded to Q73-2, which was mailed to them a year after the course was over. The questions were scaled on a relative scale (1= much more than other courses....5= much less than other courses). On all three questions, the Non-Outward Bound students were either neutral (the same as other courses) or slightly positive (a little more than other courses). In contrast, the Outward Bound people tended to respond strongly in the affirmative.

#5 You acquired an interest you pursued (or want to pursue) after the course.

NOB mean= 3.02041 OB mean= 2.

F= 11.147 p= 0.00178 w^2= 0.13503

#8 You learned how to approach new subject matter that might be encountered outside the course.

NOB mean= 2.77551 OB mean= 2.125

F= 5.00232 p= 0.02714 w^2= 0.058

#10 The course was challenging

NOB mean= 2.85714 OB mean= 2.125

F= 4.9825 p= 0.02743 w^2= 0.05773

II. Change in attitudes towards the course over time

A. In the first analysis of the time factor, responses to questions on the final course evaluation (Q73-1) for fall 1973 were compared to responses to comparable questions from the questionnaire mailed out a year later (Q73-2). We found two interesting results from comparisons made under the heading of "Overall Properties of the Course". A relative scale (1= much more than other courses....5= much less than other courses) was used. Both questions referred to specific effects the course may have had.

#28 (Q73-1)--#5 (Q73-2) You have acquired an interest you pursued (or want to pursue) after the course.

Both groups, on this first question, responded in the affirmative (i.e. more than other courses). Although there was not a significant difference, the Outward Bound participants did tend to respond more strongly in the affirmative than the Non-Outward Bound students. A significant difference was found in analysis of the combined factor (OB and year). As can be seen from the chart below, the OB group <u>increased</u> its tendency to respond in

the affirmative, while the NOB group decreased this tendency almost to the point of rating the course as being the same as other courses.

NOB mean (Q73-1)= 2.32447 OB mean (Q73-1)= 2.375

NOB mean (Q73-2)= 2.93617 OB mean (Q73-2)= 2.

Factors:

Factors:	F	P	w^2
Outward Bound	3.37695	0.06755	0.02127
Year	0.35099	0.56272	0.03145
OB + Year	6.09925	0.01554	0.03145

The other significant difference which was found was on the question "You learned how to approach new subject matter that might be encountered outside the course". (#32(Q73-1)--#8(Q73-2) There was a significant change when year-to-year differences were analyzed. The results showed that the Outward Bound group remained constant over the year in answering this question, while the Non-Outward Bound group again decreased its tendency to respond in the affirmative to a point just above the neutral rating (Same as other courses).

NOB mean (Q73-1)= 1.87234 OB mean (Q73-1)= 2.1875

NOB mean (Q73-2)= 2.70213 OB mean (Q73-2)= 2.125

Factors:	F	P	w^2
Outward Bound	0.39998	0.5365	0
Year	4.58099	0.03417	0.02314
OB + Year	6.19517	0.01482	0.03357

B. The second time-factor analysis compared the students' expectations of the course on the first day (Q74-1) with their expectations four days later, after the Outward Bound selections were made (Q74-2). The first analysis was run using three groups (OB, NOB, and LLT). No significant differences were found. The analysis was then repeated twice for each question; one was done with the LLT dropped from the analysis altogether, and the second was done on a Non-Outward Bound group and an Outward Bound group which combined OB and LLT. On all three questions, and for both methods of analysis, significant differences were found between the OB and NOB students; however, no differences appeared between questionnaires, nor was there any significant interaction of the two factors (time and OB) across the questionnaires. The same relative scale was used. Again, everyone who responded tended to be above the indifferent point (same as other courses), with those associated with Outward Bound tending to be more affirmative than those not involved with the program.

#16 (Q74-1)--#4 (Q74-2) Interesting material and format

For LLT dropped:

NOB mean (Q74-1)= 1.70055 OB mean (Q74-1)= 1.4

NOB mean (Q74-2)= 1.80503 OB mean (Q74-2)= 1.46667

OB factor: F= 4.0003 p= 0.04652 w^2= 0.02726

For LLT + OB: p= 0.02066

#19 (Q74-1)--#8 (Q74-2) Valuable and useful subject matter

For LLT dropped:

NOB mean (Q74-1)= 1.74072 OB mean (Q74-1)= 1.35

NOB mean (Q74-2)= 1.90566 OB mean (Q74-2)= 1.53333

OB factor: F= 6.71163 p= 0.01122 w^2= 0.04296

For LLT + OB:

#22 (Q74-1)--#6 (Q74-2) Application of course material to situations outside the classroom

For LLT dropped:

NOB mean (Q74-1)= 1.89692 OB mean (Q74-1)= 1.5

NOB mean (Q74-2)= 1.64151 OB mean (Q74-2)= 1.4

OB factor: F= 2.9592 p= 0.04841 w^2= 0.02428

III. Application of course material and course influence over one year.

The questionnaire sent out to the fall 1973 group (Q73-2) was analyzed, focusing on the questions relating to the retention and applications of the subject matter of the course. Two questions involving more subjective evaluation of the influence that the course had (after one year had passed) indicated significant differences.

#43 "I confront more challenging situations in my life as a result of my experiences in the course" (1= agree strongly...3= indifferent...5= strongly disagree)

NOB mean= 3.39126 OB mean= 2.5

F= 9.50139 p= 0.00336 w^2= 0.11566

Although neither group responded strongly either way, the Outward Bound participants did agree and the Non-Outward Bound students disagreed.

#44 Please rate on a scale from 1-5 how relevant you feel the course was to real-life situations. (1= very relevant...5= totally irrelevant)

NOB mean= 2.12245 OB mean= 1.5625

F= 4.47822 p= 0.03602 w^2= 0.05079

While both groups felt the course was relevant, the Outward Bound group felt it more strongly than did the Non-Outward Bound group.

IV. General Attitudes

The final analysis centered on questions on general attitudes which were given in 074-2, after the 1974 Outward Bound participants had been selected. This analysis was carried out between the NOB group and the combined OB-LLT group. The two were combined because the p values for the combined group were very close to those p values obtained when LLT was dropped. Significant differences between the two groups were found for three categories of attitudes.

Two scales were used for the questions in sections A and B (#12-39). The "POP" scale asked the student to rank the percentage of the population he or she thought would be rated as having more of the selected characteristics than he or she had.

The "CH" scale measured the direction the student thought he or she might change in terms of the selected trait (1= increase, 2= same, 3= decrease).

A. Values

#16 Aesthetic (Form and harmony) (POP)

NOB mean= 31.7053 OB mean= 22.9149

F= 4.06104 p= 0.04484 w^2= 0.03921

The NOB group felt that approximately 32% of the population would have more in the way of aesthetic values than they, while the OB group only ranked 23% of the population above them.

#21 Religious (Unity of life) (CH)

NOB mean= 1.82009 OB mean= 1.52113

F= 4.9419 p= 0.02755 w^2= -.04993

Both groups felt their religious values would increase, although the NOB students were closer to staying the same than were the OB students.

B. Personality

#33 Achievement via independence (CH)

NOB mean= 1.49549 OB mean= 1.23913

F= 4.19256 p= 0.04162 w^2= 0.04083

Both groups felt their ability to achieve independently would increase. The Outward Bound students, however, showed a stronger tendency in this direction, and the Non-Outward Bound students were closer to "staying the same".

#34 Intellectual efficiency (POP)

NOB mean= 24.5127 OB mean= 33.1403

F= 4.80104 p= 0.02972 w^2= 0.04824

The NOB group ranked less of the population as being above themselves in this area than did the OB group.

C. Education

Scale: 1= agree strongly....7= disagree strongly

#42 "External motivation such as tests and grade pressure should be applied in cases where there is little student interest in the material."

NOB mean= 4.73712 OB mean= 5.86364

F= 7.62297 p= 0.00728 w^2= 0.08114

Both groups disagreed with the statement; however, the Outward Bound people disagreed more strongly than the Non-Outward Bound people.

#43 "More emphasis should be placed on learning through group interaction than is done at present in most courses".

NOB mean= 2.96226 OB mean= 1.72727

F= 13.0848 p= 0.00086 w^2= 0.13877

The students not involved in Outward Bound were almost neutral on this question, while those involved with the program agreed fairly strongly.

#47 "Colleges should require one or two terms spent in a non-classroom situation to enrich one's educational experience."

NOB mean= 3.24528 OB mean= 2.22482

F= 4.35149 p= 0.03807 w^2= 0.04278

The Non-Outward Bound members of the class were neutral on this question. The students involved in the program agreed (although not strongly) with the statement.

V. Outward Bound Evaluation

On the questionnaire mailed to the students who took the course in 1973 (Q73-2) there was a section for Outward Bound participants only. This section asked the students to evaluate on a scale some of the effects of their experiences in Outward Bound. The questions and the means obtained follow:

#47 Rate on a scale from 1-5 the applicability of your Outward Bound experience to the material in the course. (1= very applicable...5= not at all)

mean= 2.4

#48 Rate on a scale from 1-5 how much you were able to (and did) apply the learning principles discussed in the course during the O.B. trips. (1= I often tried to apply the principles...5= I never thought about them)

mean= 3.1875

#49 Rate on a scale from 1-5 how much you feel the debriefing sessions helped you to understand the principles discussed in the course. (1= they helped a great deal...5= they were of no help)

mean= 2.

#50 Rate how much you feel your participation in Outward Bound increased your motivation to work in the course. (1= substantially increased...5= it had no effect)

mean= 2.875

#51 Rate how well Outward Bound was integrated overall into the course. (1= very integrated...5= it seemed to have nothing to do with the course)

mean= 2.9375

#52 If you had not participated in Outward Bound, do you feel your performance in the course would have been better or worse? (1= much better...3= about the same...5= much worse)

mean= 3.5625

Discussion

There are groups of questions that revealed significant differences between members of the learning course who did not participate in the Outward Bound program. For example, in the course evaluation for fall of 1973, the Outward Bound group consistently ranked the more technical and structural aspects of the course more negatively than the Non-Outward Bound group, although on most questions both groups ranked the course above other courses. The Outward Bound group seemed to be more concerned about their grades and more dissatisfied with the grading system of the course in general. One possible explanation for this could be that, because they were away from their academic environment for three weekends of the terms, the participants in the program felt they had less studying time. This may have led to a more pronounced feeling of pressure towards getting good grades, even though their grades were equated at the end of the term. However, since no questions

relating to this time factor were asked, we are merely speculating. Further investigation into and analysis of this possible time factor is required.

It is more difficult to draw a conclusion as to why such students would also respond more negatively to other questions dealing with the overall coherency and structure of the course. The responses to the questions pertaining to the difficulty, integration, and organization of the course, as well as those pertaining to the learning of factual content, indicate a possible disrupting effect of the program on these aspects of the course. This suggests that the program was not well-integrated into the rest of the course. Indeed, the results obtained from the 1973 Outward Bound participants certainly do not indicate that they felt it was well-integrated at all.

A likely explanation for the negative trend on the structural aspects of the course relates to the exposure to experiential learning and a resultant change in the attitudes of Outward Bound participants. There is an alternate, and perhaps more plausible, explanation to explain these differences; however, it is also more difficult to investigate. This is the notion that it is not that Outward Bound causes people to become interested in innovative education, but rather that the program attracts people who have such a predisposition. For example, Q74-2, which was compiled prior to any actual exposure to Outward Bound, showed a more positive trend toward innovative education among Outward Bound selectees, than non-participants. This,

combined with similar data from fall 1973 subjects, could be an indicator of the type of person who will apply for Outward Bound. This does not mean, of course, that participation in Outward Bound might not increase this predisposition; on the contrary, this seems highly likely. A possible way to investigate this would be to measure differences/similarities between the people that apply for the program and are not, for one reason or another, selected, and those that do complete the series of weekend trips. This leads to another consideration, which is determining whether there are selection factors involved in deciding who does and does not participate. The potential for the use of such factors certainly exists. Applicants in 1973 had two weeks to decide if they wanted to participate. There are indications that those who dropped out of the program had lower GPA's than those who continued, and that participants tended to have higher GPA's than the rest of the class. On the other hand, the grade incentive may contribute to the group's heterogeneity. The 1974 participants may actually be a more random sampling as they were chosen by lottery (with any having past Outward Bound experience automatically dropped); also, they had only one week to decide whether or not they wanted to remain in the program. These are all problems which require further investigation.

Other results from our questionnaires can be used to support both positions (selection factor v. OB influence). Outward Bound influence for the first 1974 questionnaire (Q74-1) was analyzed three different ways: NOB- OB- LLT, NOB- OB + LLT, and NOB- OB.

The first method of analysis produced no significant differences in study habits or expectations concerning the course. When the two Outward Bound programs were combined into one group, however, significant differences were revealed for two questions (regarding flexibility and the amount of factual content they would learn). When the LLT was dropped completely from analysis, no significant results were found between the two remaining groups. For 1974, then, the LLT group obviously introduces a compounding factor, which could be explained by the fact that they had already had 10 days of Outward Bound experience before the course started. It could therefore be argued that this group, with their exposure to Outward Bound, influenced the responses, whereas the O.B. people who had not yet done anything were, in fact, no different than the non-participants.

This is not conclusive evidence, however, for the hypothesis that Outward Bound changes attitudes towards education. Considering the nature of the LLT, there is probably a selection factor involved in forming this group. Secondly, there were no comparable questions on the first questionnaire to those regarding innovative education on Q74-2, and it is questionable whether answers to such questions would change significantly merely as a result of being informed of future participation in the program. Also, the course as planned for 1974 no longer incorporated many of the traditional elements (i.e. exams) which seemed to be reacted against by the Outward Bound group of 1973. This whole problem creates a great many ambiguities concerning

the interpretation of questions which one might naturally expect would be influenced by Outward Bound participation. For example, Outward Bound people indicated on O74-2 (after notification, before actual experience) that they expected the learning course to be exciting, to contribute more to their individual development, and to increase their self-respect and confidence. An initial assumption might be that anticipation of their Outward Bound experiences-to-come could influence these results, but the possible interference of a selection factor casts some doubt on this. As a possible control, these questions should be asked at the very beginning of a course, prior to selection.

It is undoubtably necessary for future investigations to examine more thoroughly the problem of the selection factor. More detailed questions should be given concerning attitudes of educational methods and philosophy before and after selection of participants is effected, as well as prior to actual participation to test whether mere anticipation of Outward Bound causes significant changes in responses to these questions.

Apart from the selection factor problem, Outward Bound did seem to have a marked influence on participants, regardless of their initial attitudes towards education which may have distinguished them from non-participants. Most of these influences were discovered by examining the results of the questionnaire sent out in the fall of 1974 to the fall 1973 class. The Outward Bound group found the course to be more challenging and more relevant to real-life situations than did

the other group; this might be used as indication of some positive aspects of integrating the Outward Bound program into the learning course. The OB group also felt (more strongly than the other group, again) that they had acquired interests which they were interested in pursuing after the course. This is another point which should be pursued, to determine exactly what types of interests are actually indicated; they could concern the activities engaged in only during the weekends, or such activities might include exploration into other experimental methods of learning and related fields of psychology. Preliminary hunches favor the former, since there were no significant differences found on the questions directly pertaining to increased interest in either of these fields.

Perhaps one of the more interesting results was the high rating of the statement "I confront more challenges as a result of my experiences in the learning course". This certainly gives the impression of a strong Outward Bound influence in the individuals' assessments of their own capabilities. This too should be pursued to discover what is meant by "challenges" and to measure how they relate to Outward Bound challenges encountered in the labs.

This discussion has described a variety of approaches future, in-depth studies may follow in expanding on the results and ideas described herein. Most importantly, the existence of a selection factor must be determined in order to assess accurately the effects of the program. Another approach mentioned only in

passing is to examine fully the effects of a change in course format and structure (i.e. exams to brief-writing) as it relates to Outward Bound.

It seems that some general conclusions may be drawn. Outward Bound has some effect on its participants and on their perceptions of the course and its effects on them. The results indicate that the program does at least meet the goals of its coordinators to provide a taste of experiential learning, an opportunity for individual growth, and a means for making a college course more relevant to the students.

References

Jernstedt, G.C., and Johnson, B.T. The effects of long term experiential learning program on their participants. Hanover, NH: Dartmouth College, 1974.